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| OmniRAN PAR and 5C Text Commenting |
| Date: 2013-09-27 |
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Abstract

This document contains the comments submitted on the text proposal for PAR and 5C of a Recommended Practice for Network Reference Model and Functional Description of IEEE 802 Access Network.

Proposed amendments of the contributors listed above to the PAR and 5C text are marked in colors.

**PAR content**

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| **Submitter Email:** max.riegel@ieee.org**Type of Project:** New IEEE Standard**1.1 Assigned Project Number:** <unassigned>**1.2 Type of Document:** Recommended Practice**1.3 Life Cycle:** Full Use**2.1 Project Title:** Network Reference Model and Functional Description of IEEE 802 Access Network**3.1** **Working Group:** t.b.d., proposed IEEE 802.1**Contact Information for Working Group Chair**   **Name:**    **Email Address:**    **Phone:** **Contact Information for Working Group Vice-Chair**None**3.2** **Sponsoring Society and Committee:** IEEE Computer Society/LAN/MAN Standards Committee (C/LM)**Contact Information for Sponsor Chair**   **Name:** Paul Nikolich   **Email Address:** p.nikolich@ieee.org   **Phone:** 857.205.0050**Contact Information for Standards Representative**   **Name:** James Gilb   **Email Address:** gilb@ieee.org   **Phone:** 858-229-4822**4.1 Type of Ballot:** Individual**4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot:** 03/2015 **4.3 Projected Completion Date for Submittal to RevCom:** 11/2015 **5.1 Approximate number of people expected to be actively involved in the development of this project:** 40**5.2 Scope:**This document specifies recommendations for deployment of access networks based on the family of IEEE 802 Standards. It describes a Network Reference Model, the behavior of network entities and functional composition of IEEE 802 access networks for different purposes. It also describes Reference Points between different network entities.This recommended practice specifies an access network based on the family of IEEE 802 Standards. It provides a Network Reference Model, including entities and reference points, along with behaviorial and functional descriptions of communications among those entities.This document specifies recommendations for the deployment of access networks based on the family of IEEE 802 Standards. It describes a Network Reference Model and the functional composition of IEEE 802 protocols realizing access networks composed of a multiplicity of IEEE 802 technologies.This document specifies recommendations for deployment of access networks based on the family of IEEE 802 Standards. It describes a Network Reference Model and the behavior and functional composition of IEEE 802 protocols realizing access networks for different purposes.**5.3 Is the completion of this standard dependent upon the completion of another standard:** No**5.4 Purpose:**The purpose is to enable users and operators to more easily design and deploy access networks based on IEEE 802 technologies, guide the developers of extensions to the existing standards in support of a unified access network, and to extend the applicability of IEEE 802 standards into new deployment domains by specifying the functions of the IEEE 802 technologies when deployed in access networks.The purpose is to enable wireless service providers and operators to more easily design and deploy access networks based on IEEE 802 technologies, guide the developers of extensions to the existing standards in how the pieces are fitting together, and to extend the applicability of IEEE 802 standards into new deployment domains by illustrating the structure and functions of the IEEE 802 standards family for access networks.**5.5 Need for the Project:** For heterogeneous networks, user terminals may have to support multiple network interfaces, multiple network access technologies, and multiple network subscriptions. The project will generate a recommended practice to deploy IEEE 802 protocols for building access networks enabling such functionalities.Today, there are a number of differing networks for connecting a variety of differing devices, such as Smart Grid, Home Automation or Internet of Things. However, new deployments continue to suffer from common well known networking issues, such as service control, security and provisioning. This project will help to unify the different interfaces, enabling sharing of network control, use of software defined network (SDN) principles, and eventually bringing down the barriers to new network technologies, and to new network operators and service providers.Today, many more networks are coming up for connecting any kind of devices, such as Smart Grid, Home Automation or Internet of Things. However, new deployments may suffer the same old networking issues, such as service control, security and provisioning. This project will foster the market growth by unifying the interfaces, enabling sharing of network control and Software Defined Network (SDN) architectures, and eventually bringing down the barriers for new network technologies and new network operators and service providers.Today, many more networks are coming up for connecting any kind of devices, such as Smart Grid, Home Automation or Internet of Things. However, new deployments may suffer the same old networking issues, such as service control, security and provisioning. This project will foster the market growth by unifying the interfaces, enabling sharing of network control, and eventually bringing down the barriers for new network technologies used by network operators and service providers.**5.6 Stakeholders for the Standard:**IEEE 802 Working Groups, network operators, service providers, network equipment manufacturers, consumer electronic device manufacturers, standards developers Network operators, service providers, network equipment manufacturers, semiconductor manufacturers, consumer electronic device manufacturers, standards developers, other IEEE 802 working groups**Intellectual Property****6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?:** No**6.1.b. Is the Sponsor aware of possible registration activity related to this project?:** No**7.1 Are there other standards or projects with a similar scope?:** No**7.2 Joint Development**   **Is it the intent to develop this document jointly with another organization?:** No**7.3 International Standards Activities****A. Adoptions: Is there potential for this standard to be adopted by another organization?:** No**B. Harmonization: Are you aware of another organization that may be interested in portions of this document in their standardization efforts?:** No**7.4 Does the sponsor foresee a longer term need for testing and/or certification services to assure conformity to the standard?:** No**Additionally, is it anticipated that testing methodologies will be specified in the standard to assure consistency in evaluating conformance to the criteria specified in the standard?:** No**8.1 Additional Explanatory Notes:** #1.2: Recommended Practices do not include mandatory statements, and this specification is not intended to serve as the basis of statements of conformance. However, the material provides a basis for the development of normative protocol standards that include mandatory statements and to which conformance can be stated. It is the intention of the sponsor to initiate the development of such protocol standards based on the underlying foundation established in this Recommended Practice.#3.2, #5.6: Development of this standard will recognize the essential stakeholder role of the IEEE 802 Working Groups in the results. Prior to Sponsor agreement to forward a draft to Sponsor Ballot, each IEEE 802 Working Group will be invited to delegate a participant to serve as a member of any ballot group responsible for consideration of any internal draft. |
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**10.5 Criteria for standards development (five criteria)**

Source: <http://www.ieee802.org/PNP/approved/IEEE_802_OM_v11.pdf>

**10.5.1 Broad market potential**

A standards project authorized by IEEE 802 LMSC shall have a broad market potential. Specifically, it shall have the potential for:

a) Broad sets of applicability.

The proposed Recommended Practice for Network Reference Model and Functional Description of IEEE 802 based Access Networks is applicable to all IEEE 802 access technologies for a broad variety of deployment cases and should guide new users of IEEE 802 technologies in the appropriate arrangement of IEEE 802 standards for access networks.

b) Multiple vendors and numerous users.

Due to the applicability based on the use of the existing IEEE 802 access technologies, the standard will be supported by the vendors of IEEE 802 standards conformant equipment and will find usage for a variety of applications throughout the IT industry and other markets requiring communication infrastructures.

**10.5.2 Compatibility**

IEEE 802 LMSC defines a family of standards. All standards should be in conformance : IEEE Std 802, IEEE 802.1D, and IEEE 802.1Q. If any variances in conformance emerge, they shall be thoroughly disclosed and reviewed with IEEE 802.1 WG. In order to demonstrate compatibility with this criterion, the Five Criteria statement must answer the following questions.

a) Does the PAR mandate that the standard shall comply with IEEE Std 802,

 IEEE Std 802.1D and IEEE Std 802.1Q?

The PAR defines in the scope that the standard shall support solutions based on IEEE 802 technologies, which includes the IEEE Std 802, IEEE Std 802.1D and IEEE Std 802.1Q.

b) If not, how will the WG ensure that the resulting draft standard is compliant, or if not, receives appropriate review from the IEEE 802.1 WG?

It is proposed that the project is carried through by the IEEE 802.1 WG in close cooperation with the other IEEE 802 working groups contributing technologies for use in access networks.

**10.5.3 Distinct identity**

Each IEEE 802 LMSC standard shall have a distinct identity. To achieve this, each authorized project shall be:

c) Substantially different from other IEEE 802 LMSC standards.

The standard is substantially different from all other IEEE 802 standards because there is no single recommended practice that combines the as it addresses aspects of all IEEE 802 access networks usually described within a ‘Stage 2’ document. Such a kind of document does not exist yet for access networks based on IEEE 802 technologies.

d) One unique solution per problem (not two solutions to a problem).

The standard provides a generic model and a functional description of access networks based on IEEE 802 technologies. As the functional description is derived from the existing IEEE 802 protocols, the uniqueness of the IEEE 802 standards provides uniqueness for the described solutions as well.

e) Easy for the document reader to select the relevant specification.

The specification will explain the use and combination of the existing IEEE 802 specifications for creating access networks guiding the reader in the selection of the appropriate specifications.

**10.5.4 Technical feasibility**

For a project to be authorized, it shall be able to show its technical feasibility. At a minimum, the proposed project shall show:

a) Demonstrated system feasibility.

‘Stage 2’ documents are well known and widely used tools for developing the specifications of protocols and procedures of access networks. Therefore the approach to create a ‘Stage 2’ document for access networks based on IEEE 802 standards is feasible.

b) Proven technology, reasonable testing.

Creation of a ‘Stage 2’ document is a well proven technology for the specification process of access networks. Applicability of a ‘Stage 2’ document can easily be verified by presenting a couple of application scenarios.

c) Confidence in reliability.

Since the standardization of the Integrated Digital Services Network in the eighties of the last century all modern communication network specification efforts established a ‘Stage 2’ document as an intermediary step towards the standardization of protocols and procedures. It is expected that the proposed standard closes the specification gap for access networks based on IEEE 802 technologies.

***10.5.4.1 Coexistence of IEEE 802 LMSC wireless standards specifying devices for unlicensed operation***

A WG proposing a wireless project is required to demonstrate coexistence through the preparation of a Coexistence Assurance (CA) document unless it is not applicable.

 The WG will create a CA document as part of the WG balloting process.

 If the WG elects not to create a CA document, it will explain to the Sponsor the reason the CA document is not applicable.

Not applicable to the project, as it will not address any changes to the IEEE 802 wireless standards.

**10.5.5 Economic feasibility**

For a project to be authorized, it shall be able to show economic feasibility (so far as can reasonably be estimated) for its intended applications. At a minimum, the proposed project shall show:

a) Known cost factors, reliable data.

b) Reasonable cost for performance.

c) Consideration of installation costs.

The project does not address the development of new technology but the application and combination of existing IEEE 802 technologies for building access networks. Therefore it does not raise new questions about the economic feasibility aside of the efforts necessary to create the specification.

Recent comparable projects in the industry have shown that such specification can be created by a group of about 30 volunteers within about a year. (e.g. WiMAX Forum NWG).